

NATURE DETECTIVES

Spring 2019



Thirteen-lined Ground Squirrels Plus Arithmetic

Add $6+7$ and your answer is the number of light and dark stripes on ground squirrels with an **odd** name. The name truly is **thirteen-lined ground squirrel**. In addition to thirteen cute stripes, their fur has orderly little spots. The cream-colored spots are more squarish than round, and they march in a line up the middle of each dark stripe. The spotted dark stripes and thinner light stripes stand out against a furry tan background. What a fancy coat on a tiny mammal!

Thirteen-lined ground squirrels spend most of their time underground, out of sight. In late summer or early fall, the critters enter their winter burrows and plug the entrance shut. The burrows are deep so the temperature in their winter quarters never drops below freezing, no matter how frigid it is above ground. The little squirrels snooze through the winter, barely breathing.



Pull Out and Save

Ground Squirrel Spring

Once spring arrives, their internal clock signals it is time to wake up. At first, like some sleepy kids on a school morning, the squirrels barely stir. They might visit their toilet room, but they snuggle back to sleep. While school kids may snatch a few minutes extra sleep, ground squirrels may doze for a few more days. But as the spring air grows warmer, the squirrels finally get excited to be out doing their squirrel work.

The male squirrels are the early risers. Their first spring job is getting their digestive system working. The next task is finding mates. Some males already know the whereabouts of female neighbors' burrows, and they hope to be ready and waiting when those neighbors wake up. Males will sometimes tussle with other males over territory or mates.



The squirrels communicate with other thirteen-lined ground squirrels by vocalizing (including alarm calls) and by scent-marking. There are scent glands around their lips so a bit of their odor is left on rocks or whatever they rub their chins against.

A friendly greeting between these squirrels is made by touching noses and lips. It looks a little like a kiss, but it's more like a sniff.



Digging into Work

In their prairie grassland habitat, thirteen-lined ground squirrels prefer open spaces with short or mowed grasses. The habitat has few hiding places and many predators. A wide variety of grassland animals would eat a thirteen-lined ground squirrel caught out in the open. These predators include snakes (such as bull snakes and rattlesnakes) swift foxes, coyotes, weasels, badgers, and many kinds of raptors (such as red-tailed hawks, and Cooper's hawks). Dogs and cats are predators too. To find shelter from danger and from intense summer heat, ground squirrels dig and dig.

They dig lots of short tunnels all around their home turf. These short runs are hideouts used for a quick escape from danger. The females also dig longer tunnels with nest space for their babies. All ground squirrels, including the youngsters born in the spring, must dig their

own deep winter quarters before it is time to hibernate. The nest burrows and winter burrows have a food storage space and a side room for use as a toilet.

Watch Them Being Squirrely

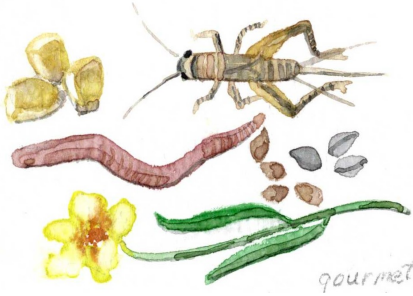
Because much of the prairie has been converted to buildings and farms, wide-open habitat for ground squirrels is limited. Search for thirteen-lined ground squirrels in old cemeteries, on golf courses, in parks, empty lots, yards, or weedy areas around farms. They need spaces where they can find food and room for digging. Some even live in prairie dog colonies.

Thirteen-lined ground squirrels are fun to watch when they are standing on their hind legs for a better view of their surroundings, or busily digging, or grooming, or nibbling the seeds off a tall stem. Like all squirrels, they are merely acting squirrely while keeping an eye out for predators. Nice mornings and late afternoons are often the best times for observing their activity.

During the hot summer mid-days, the squirrels rest in the cool shade of a burrow. When you add hiding and resting to seven or more months hibernating, it equals a lot of time spent underground in a variety of tunnels. To make their burrows less visible to predators, they flatten the dug-out soil with their feet and the top of their head to avoid a tell-tale mound around the hole.



Gathering Food



Adult thirteen-lined ground squirrels weigh about as much as a stack of twenty nickels. Their diet includes vegetables such as grasses, weeds, and seeds. Bird and insect eggs are a treat when found. Sometimes, squirrels munch on corn, oats, wheat, and sunflower crops, but they may help farmers and ranchers by eating grasshoppers and other insects that are farm or ranch pests. They also eat moth and butterfly larvae, beetles, crickets, and ants.

They choose quite a varied menu, which is necessary for adding weight during the limited hours they spend above ground. Food that doesn't spoil quickly can be carried in the squirrels' inside cheek pouches for later munching. If they have the opportunity, thirteen-lined ground squirrels are known to prey on tiny mice and snakes.

Male squirrels have little to do except eat all summer long. They get chubby before youngsters and females, and they will be ready to hibernate earliest.

May is Baby Month

By the time May rolls around, female ground squirrels have instinctively prepared a grass-lined nest for around six to eight babies. A food supply room for the mom's snacks is close by and a toilet room is just down a short tunnel.

The naked babies (called pups) are born blind and helpless. Newborn pups need constant mothering, but they grow fast. By the time they are four to six weeks old, they are exploring outside the burrow. The pups stick close to the nest tunnel for about a week, but they gradually venture further and further away.

Before long, they find their own space for digging burrows and acting squirrelly. The squirrels do not live together in family groups, but more ground squirrels can be found in places with safe tunnel-digging space and plentiful food.



The young pups, especially the young males, are not as careful as their more experienced elders, and that makes them an easy target for predators. Long life for any thirteen-lined ground squirrel is not likely to be more than seven years.

The *Nature Detectives* article on pikas in the 2018 winter IMAGES magazine was missing some text and other text was misaligned. The corrected **Pikas Squeak and Scurry on Rocky Slopes** is available online in the Nature Detectives Library and can be printed from the Library site: <https://www.bouldercounty.org/open-space/education/nature-detectives/>.



Shapes—Nature's Geometry

Thirteen-lined ground squirrels have very specific patterns in their fur—things like straight lines and circles. It almost looks like someone drew them in! Patterns in nature are not that unusual. Your dog may have random spots on his coat, but many things in nature follow patterns. Go outside to your yard, a park, or an open space, and look for these patterns in nature—in leaves, grass, fur, feathers, trees, flowers, water, and more.

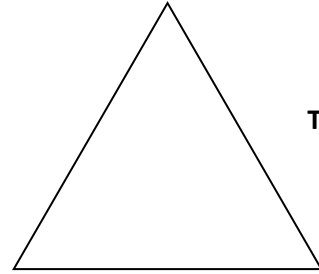
Draw an example of what you find:



Straight line



Spiral



Triangle



Square or Rectangle



Circle

Another Fun Shape:

Hibernation Numbers

Like lots of animals, thirteen-lined ground squirrels hibernate in the winter. This allows them to survive when food is less available. Their body temperature drops to just a little warmer than freezing and their heart rate slows way down. This means they don't need much energy to stay alive.

During summer activity their heart beats about 200-300 times a minute. During hibernation it only beats 15-20 times a minute. Instead of 150 breaths a minute when they are active, they only breathe about four times a minute in hibernation.

To measure your regular breaths and heartbeat, set a timer for one minute. Relax and count how many times you breathe in that minute. Then find your pulse by placing your hand on your chest or putting two fingers on the inside of your wrist. Count how many times your heart beats in a minute. Think how few those counts would be if YOU were hibernating!

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